International Climate Change Negotiations and Impacts on Clean Cities Technologies

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Overview of the Global Climate Change Issues Related to Transportation

- Why are Clean Cities technologies important for addressing climate change?
- What is the U.S. doing about climate change and how does this relate to AFVs?
- What is the international community doing about climate change and how does this relate to AFVs?
- Why Quantify and Document GHG Emission Reductions from AFVs-What Can You Do With Them?

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Why Are Clean Cities Technologies Important for Addressing Climate Change?

- The transportation sector is the fastest growing source of greenhouse gas emissions in the world
- As nations grow wealthier, their people buy cars
  - U.S. per capita car ownership exceeds 1 per licensed driver
- Motor gasoline consumption yields about one-fifth of all U.S. GHG emissions

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Why Are Clean Cities Technologies Important for Addressing Climate Change?

- One gallon of motor gasoline consumed emits 19.5 pounds of carbon dioxide; one gallon of diesel emits 22 pounds of carbon dioxide
- Alternative fuel vehicles are able to reduce GHG emissions when compared with conventional transportation technologies

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What Is the U.S. Doing About Climate Change Issues Related to Transportation?

- **Created a domestic-based Voluntary Reporting of Greenhouse Gases Program under Section 1605b of the Energy Policy Act**
  - Of the 1,750 projects reported in 1999, 73 were transportation related projects

- **Ratified the United Nations Framework Convention on Climate Change (UNFCCC) in October 1992**
  - Industrialized countries voluntarily agreed to reduce their GHG emissions to 1990 levels by 2000
  - U.S. Initiative on Joint Implementation (USIJI) program as part of the Activities Implemented Jointly (AIJ) Pilot Phase
    - **Of the 144 projects registered with USIJI, only one is in the transportation sector, the RABA/IKARUS CNG Natural Gas Bus Engine Project funded by Dutch investors and hosted in Hungary**

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What Is the U.S. Doing About Climate Change Issues Related to Transportation (cont.)?

- **Began participation in negotiations regarding the Kyoto Protocol in December 1997**
- **Operates research and development programs on advanced technologies that reduce GHGs in programs throughout the U.S. Government**
  - **Including the U.S. Department of Energy (DOE), the Environmental Protection Agency (EPA), the National Oceanic and Atmospheric Administration (NOAA), and the National Air and Space Administration (NASA), and others**

What Is the U.S. Doing About Climate Change Issues Related to Transportation? (cont.)

Clean Cities International Program

- **Gas Research Institute (GRI) and Clean Cities Program are sponsoring 6 reverse trade missions in the next 1.5 years to expose cities in developing countries to U.S. AFV technologies including GHG impacts of technologies**
  - **To participate in some of the international mechanisms for GHG emission reductions, a developing country partner is required**

- **NETL in partnership with GRI and Clean Cities created a Resource Guide, "Greenhouse Gas Emission Reductions and Natural Gas Vehicles: A Resource Guide on Technology Options and Project Development"**

- **Training sessions at the 6th National Clean Cities Conference in San Diego, CA and the 7th National Clean Cities Conference in Philadelphia, PA on "Developing International GHG Emission Reduction Projects Using AFV Technologies"**

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What Is the International Community Doing About Climate Change Issues?

The United Nations Framework Convention on Climate Change

- **Agreed upon in June 1992 by 160 Countries in Rio de Janeiro, Brazil**
- **Goal: to stabilize greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous interference with the climate system**

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What Is the International Community Doing About Climate Change Issues?

The United Nations Framework Convention on Climate Change (cont.)

- **Industrialized countries (Annex 1) to take actions aimed at returning greenhouse gas emissions to 1990 levels**

- **Joint Implementation concept introduced**
  - Activities Implemented Jointly (AIJ) Pilot Phase initiated at COP 1 in 1995

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What Is the International Community Doing About Climate Change? (cont.)

- **Proposed Kyoto Protocol in December 1997**
  - **Annex 1 countries have fixed targets for emission reductions five percent below 1990 levels during the 2008-2012 compliance period**
  - **Greenhouse gases included are carbon dioxide, methane, nitrous oxides, sulfur oxides, HFCs, and PFCs**

*Please note that the U.S. Government has not ratified the Kyoto Protocol.

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What Is the International Community Doing About Climate Change? (cont.)

- **Kyoto Protocol (cont.)**
  - **Uses flexibility mechanisms to reduce greenhouse gas emissions, emissions trading, joint implementation, clean development mechanism (CDM)**
  - **Entry into force when 55 countries with more than 55 percent of total 1990 emissions ratify**

Current Status of International Negotiations

- As of March 19 2001, 84 countries have signed and 33 countries have ratified or acceded the Kyoto Protocol
- Next round of negotiations is planned for July 2001 in Bonn, Germany
- Recent U.S. Administration change opposes the Kyoto Protocol

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Current Status of International Negotiations

- **Representatives of the EU and other nations supporting the negotiations are very concerned about U.S. participation**
  - U.S. accounts for 4 percent of world population and 25 percent of greenhouse gas emissions
- **Debate over what portion of emission reductions may be undertaken using flexibility mechanisms**
- **Emission reduction projects may be undertaken under Activities Implemented Jointly**

Why Quantify and Document GHG Emission Reductions from Clean Cities Technologies - What Can You Do With Them?

- **Add economic value to your project to help offset the additional cost of technology and/or infrastructure**
  - Can contact a private broker of GHG emission reductions and sell tons
  - The price per metric ton of carbon in private transactions has ranged from US$0.50 to US$100
- **Report reductions to the U.S. Department of Energy EIA 1605b Program and receive public recognition of reductions**

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Why Quantify and Document GHG Emission Reductions from Clean Cities Technologies - What Can You Do With Them?

- **Create a U.S. Initiative on Joint Implementation (USIJI) Project and receive public recognition and potential tons for sale**

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